

~~METHOD AND APPARATUS FOR SAVING AND RESTORING  
PROCESSOR REGISTER VALUES AND ALLOCATING AND  
DEALLOCATING STACK MEMORY~~

ABSTRACT OF THE DISCLOSURE

A method and apparatus provide means for saving and restoring processor register values and allocating and deallocating stack memory. A first field of a save instruction encodes whether a value in a register of a processor is saved as an argument value or a static value. A second field of the save instruction encodes a size of a stack frame created during execution of the save instruction. An argument value is saved in a calling program's stack frame. A static value is saved in a called program's stack frame. A restore instruction is used to restore static values and deallocate the stack frame. The save and restore instructions may be executed using any programmable device, including a single instruction set architecture processor or a multi-instruction set architecture processor.

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